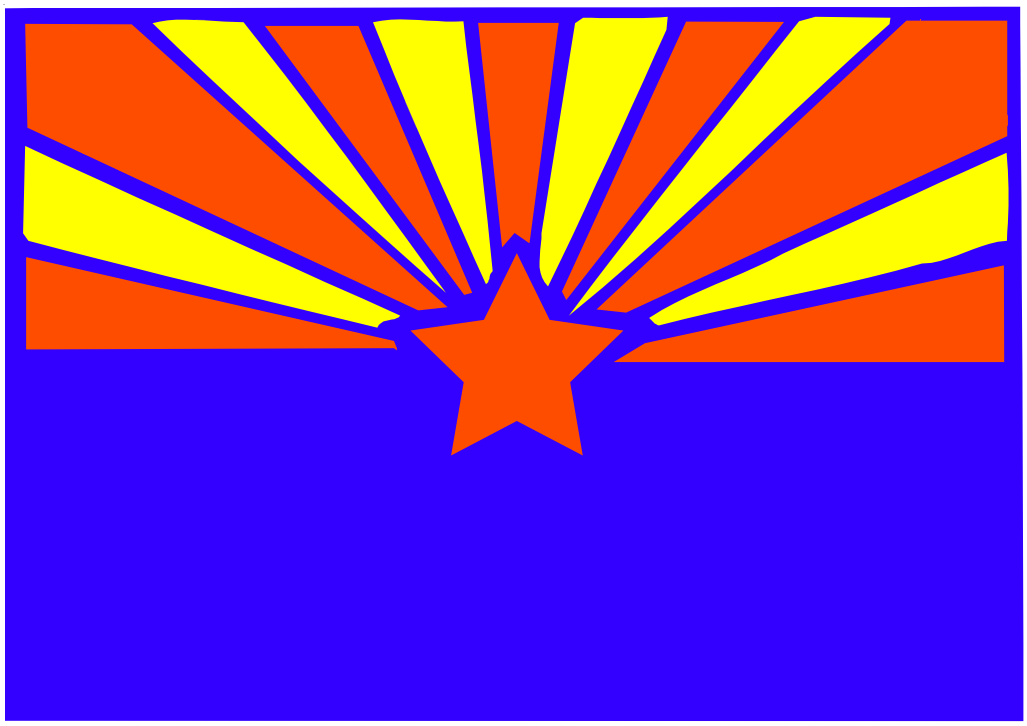
FY04 as of December 2003

Camp Navajo



Installation Action Plan

printed on 30% post-consumer material paper

December 2003

Camp Navajo Installation Action Plan

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Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Installation Restoration Program for an installation. The plan will identify environmental cleanup requirements at each site or area of concern, and propose a comprehensive, installation-wide approach, with associated costs and schedules, to conduct investigations and necessary remedial actions.

The IRP is specifically focused at contamination resulting from past activities, and is funded by the centrally-managed Environmental Restoration, Army (ER,A) budget account. Cleanup activities directed at contamination primarily resulting from current operations are separately funded and managed, and, although mentioned where relevant, will not generally be discussed in detail in an IAP.

In an effort to coordinate planning information between the IRP manager, AEC, installations, executing agencies, regulatory agencies, and the public, an IAP has been completed for Camp Navajo. The IAP is used to track requirements, schedules and budgets for all major Army installation restoration programs.

All site specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change. Under current project funding, all remedies will be in place at Camp Navajo by the end of 2007.

The following agencies contributed to the formulation and completion of this Installation Action Plan:

Arizona Department of Environmental Quality

Arizona Army National Guard

Brown & Caldwell

Engineering & Environment, Inc.

National Guard Bureau

National Guard Bureau-ARE

U S Army Environmental Center

Acronyms & Abbreviations

AEC	(United States) Army Environmental Center (formally called USATHMA)
AST	Aboveground Storage Tank
ATSDR	Agency for Toxic Substances and Disease Registry
CAP	Corrective Action Plan
CERCLA	Comprehensive Environmental Response Compensation and Liability Act (1980)
CHPPM	(United States) Center for Health Promotion and Preventive Medicine (formally called USAEHA)
COC	Contaminants of Concern
CRP	Community Relations Plan
CTC	Cost to Complete
cy	cubic yards
DA	Department of Army
DERP	Defense Environmental Restoration Program (now called ER,A)
DD	Decision Document
DSERTS	Defense Site Environmental Restoration Tracking System
EDXRF	Energy Dispersive X-Ray Fluoresance Spectroscopy
EPA	(United States) Environmental Protection Agency
ER,A	Environmental Restoration, Army (formally called DERA)
FFA	Federal Facility Agreement
FFSRA	Federal Facility Site Remediation Agreement
FS	Feasibility Study
ft	foot
ft^2	square feet
FY	Fiscal Year
gal	gallon
gpd	gallons per day
GW	Groundwater
HRS	Hazard Ranking System
IAP	Installation Action Plan
IRA	Interim Remedial Action
IROD	Interim Record of Decision
IRP	Installation Restoration Program
IWTP	Industrial Wastewater Treatment Plant
K	$1,000
kg	kilograms
LTM	Long Term Monitoring
LTO	Long Term Operation
MCL	Maximum Contaminant Level
mg	miligrams
MW	Monitoring Well
NE	Not Evaluated
NFA	No Further Action
NPDES	National Pollutant Discharge Elimination System
NOV	Notice of Violation
NPL	National Priorities List
OB/OD	Open Burning / Open Detonation
OU	Operable Unit
O&M	Operation & Maintenance
PAH	Poly Aromatic Hydrocarbons
PA	Preliminary Assessment
POL	Petroleum, Oil & Lubricants

Acronyms & Abbreviations

POM	Program Objective Memorandum (budget)
PP	Proposed Plan
PY	prior year
RA	Remedial Action
RA(O)	Remedial Action - Operation
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
REM	Removal
RFA	RCRA Facility Assessment
RI	Remedial Investigation
RIP	Remedy in Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection
SVOC	Semi-Volatile Organic Compounds
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
ug/l	microgram per liter
USACE	United States Army Corps of Engineers
USAEHA	United States Army Environmental Hygiene Agency (now called CHPPM)
USATHMA	United States Army Toxic and Hazardous Material Agency (now called AEC)
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
yr	year

Summary

STATUS: Non-NPL, RCRA Interim Status

TOTAL # OF AEDB-R SITES: 61
- 6 Active
- 55 Response Complete

DIFFERENT SITE TYPES:

5 Burn Areas	5 Contaminated Buildings
1 Contaminated Groundwater	1 Contaminated Sediments
3 Surface Disposal Areas	2 Disposal Pit/Dry Well
2 Building Demo/Debris Removal	1 Firing Range
1 Unexploded Munitions/Ordnance	3 Landfills
1 Surface Impoundment/Lagoon	6 Storage Areas
2 Small Arms Range	17 Spill Site Areas
1 Underground Storage Tank	2 Waste Treatment Plant
6 Explosive Ordnance Disposal Area	2 Incinerators

CONTAMINANTS OF CONCERN: - Unexploded Ordnance, Explosive Wastes, Herbicides, Pesticides, Metals, Solvents, Phosphorus, Nitrates, Nitrites

MEDIA OF CONCERN: Soil, Ground Water, Surface Water

COMPLETED REM/IRA/RA:
- UST Removals (Non-E,RA Funds)
- Equipment Decontamination, Ash Pile / Contaminated Soil Removal (Group G Sites)
- Contaminated Soil Bioremediation at NAAD 7 and 11B
- Contaminated Soil Removal at NAAD 43
- Installed landfill cap at NAAD 40

CURRENT IRP PHASES: RA at 1 site LTM at 5 sites

PROJECTED IRP PHASES: LTM at 4 sites

IDENTIFIED POSSIBLE REM/IRA/RA: NAAD O3

DURATION:

Year of IRP Inception:	1989
Year of RA Completion:	2007
Year of IRP Completion:	2007

Installation Information

LOCALE:

Camp Navajo is located on 28,347 acres of land in north central Arizona. The base is in rural Coconino County approximately 10 miles west of the city of Flagstaff, and just south of the town of Bellemont in the Colorado Plateau physiographic province. Interstate 40 and the Atchison, Topeka, and Santa Fe Railroad line parallel the northern boundary, along with some private and commercial. Land to the south, east and west is primarily national forest or property owned by the state of Arizona. The average elevation of the site is at approximately 7,100 feet above Mean Sea Level Datum (MSL).

IRP EXECUTING AGENCIES:

- Investigation Phase Executing Agency: National Guard Bureau
- Remedial Design/Action Phase Executing Agency: National Guard Bureau

REGULATORY PARTICIPATION:

Federal: Not Applicable
State: Arizona Department of Environmental Quality (ADEQ).

REGULATORY STATUS:

- Non-NPL with RCRA corrective action sites
- Interagency Agreement - None
- Restoration Advisory Board - Solicitation of interest for RAB members
- RCRA Permit - for OB/OD area
- Notice of Violation - None
- Docket Listed Site

RESTORATION ADVISORY BOARD (RAB) STATUS:

A community relations plan is being prepared for FY 02. A community solicitation for a RAB occurred in FY00. There was insignificant interest to establish a RAB at that time.

MAJOR CHANGES TO IAP FROM PREVIOUS YEAR (FY03):

Regulatory concurrence was reached on a manority of sites. A Draft Buy-out Report was completed in Fall 03 for delivery to regulatory review in Spring 04.

Installation Description

Camp Navajo is an active Arizona Army National Guard Facility, whose operations are the responsibility of the Camp Navajo Commander. The organization includes three directorates: Supply, Ammunition and Transportation; Administration and Services; and Plans, Operations, and Training. Under this organizational structure, about 118 people are employed by the State of Arizona to operate Camp Navajo. The entire Installation is now considered the training site, however several parcels of land are leased to tenants.

Camp Navajo, originally known as Navajo Ordnance Depot, was established during World War II through the joining of privately owned land with transferred forestlands from the Kaibab and Coconino National Forests. The depot was activated on 1 July 1942, with it's principal objectives being the storing and disposing of munitions, and training and support activities. The Ammunition Workshop Area contained the first structures erected at the depot, consisting of seven buildings and support facilities for renovation, demilitarization, and normal maintenance of ammunition. The facility was later equipped for ammunition disposal, trinitrotoluene recovery, and material proof and surveillance testing. The installation's function as a supply depot commenced with the receipt of the first load of ammunition on 6 November 1942, followed by the first shipment from the depot on 11 November 1942. The Depot later became a backup facility for the Erie Ordnance Depot and then the Benicia Arsenal. From early 1945 until the end of World War II, the depot served as a prisoner-of-war camp for Austrian soldiers, and also experienced its peak of employment with a staff of 2,173. It was also in January of 1945 that the initial shipment of chemical warfare service ammunition arrived at the depot. This and subsequent shipments consisted of bombs filled with phosgene (CG), cyanogen chloride (CK), and mustard gas (H).

The 1950's and early 1960's brought continued development at the Depot, as well as other changes. In 1953 the TNT washout unit in the Ammunition Workshop Area was converted to a closed system, which reduced "pink water" waste generation, and three fire-resistant warehouses were built by the General Services Administration (GSA) to accommodate their newly assigned mission of material receipt, storage, and issue. On 24 April 1961 the installation of a deactivation furnace for small arms ammunition was completed

On 13 February 1967 the installation was assigned with a Defense Supply Agency mission, along with the mission to store Air Force firebombs and related fusing components. On 1 March 1971, Navajo Army Depot as it was called, was placed under reserve status and redesignated as Navajo Depot Activity (NADA) under the command of the Pueblo Army Depot. In 1975, the installation was again reassigned, this time to the Tooele Army Depot, functioning as one of four installations under this command in Tooele, Utah.

In June 1982, operational control of NADA was transferred to the Arizona National Guard under license from the Secretary of the Army, and from 1 June 1982 to 30 September 1993 the installation was operated under the terms of an Intra-Service Support Agreement (ISSA). Under BRAC I, implemented in December 1988, the ammo mission was terminated, with the shipment of serviceable ammunition stocks to Hawthorne Army Ammunition Plant completed on 30 September 1993. Also on 30 September 1993, the ISSA between Tooele Army Depot and the USP&FO for Arizona was terminated allowing the transition of the base to the State of Arizona. Although the ammo mission was terminated, the training mission still continues, providing facilities and training capabilities to enhance the mobilization readiness of the 157th Ordnance Battalion and other units. Achieving this mission required development of a training environment fully conducive to mobilization readiness, so the demilitarization of remaining stocks, primarily 3.5-inch rockets, was completed on 30 September 1994. Currently the installation continues to serve as supply depot for certain nonexplosive commodities, and provides limited building maintenance to preclude deterioration of facilities.

Contamination Assessment

OVERVIEW

Studies and investigations have been conducted since 1970 by the following:

- Various private firms
- U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) - now the U.S. Army Environmental Center (AEC)
- U.S. Environmental Protection Agency (EPA)
- Arizona Department of Health Services
- U.S. Army Environmental Hygiene Agency (AEHA) - now the U. S. Army Center for Health Promotion and Preventive Medicine (CHPPM)

The following are synopses of several reports:

An investigation of solid waste management units was performed in 1987 by AEHA. The report recommended further study and clean up for the Trinitrotoluene (TNT) Wastewater Lagoons and the closed TNT Retention ponds. It was also recommended that twelve sites obtain soil cover with continued maintenance, and others relinquish removal of wastes to appropriate landfills.

AEHA studies in 1989 and 1990 concluded that no significant environmental contamination has occurred in the vicinity of the TNT Washout Lagoons and Deactivation Furnace, respectively.

Sampling conducted around four former underground storage tank sites in 1992 by Riedel Environmental revealed no significant contamination. Soil was also sampled from the retention ponds by Building 6. The soil had non-detect for BTEX and TPH at the retention ponds. Stockpiles of soil from underground storage tank removals were sampled, with only one pile revealing some contamination.

Upon recommendation for BRAC I, an Enhanced Preliminary Assessment Report was awarded to Ebasco Environmental and completed in March 1990. Camp Navajo was divided into several areas requiring environmental evaluation (AREEs): ammunition demolition area, ammunition workshops, munitions storage, munitions testing and training areas, operations facilities, hazardous materials storage, solid waste disposal and facility-wide AREEs. The results showed that areas with probability for contamination were the ammunition demolition area, the munitions testing sites, and Ammunition Workshop. These sites have the potential for unexploded ordnance (UXO), explosives-related residues and metals that may have released contaminants into the soil.

Several reports have shown that the Former Sanitary Landfill had received virtually all types of solid wastes generated by the depot from 1942 until 1966. Subsequently, groundwater downgradient from the Former Sanitary Landfill has been found to contain evidence of leachate.

A Remedial Investigation/Feasibility Study (RI/FS), performed by TetraTech, was initiated in 1995 with the purpose of defining sources of contamination at Camp Navajo. The RI/FS included 62 sites, which were then subdivided into groups (Groups B-1 through B-4 and C-1 through C-3) based upon geographic proximity or type of activity.

CLOSURES

Prior to 1997, five sites were closed by ADEQ letter:

- A portion of NAAD 24B - Building 216
- All of NAAD 33 – Former Pesticide Storage
- All of NAAD E37 – GSA Warehouse
- A portion of NAAD 60 – Building 34
- A portion of NAAD 53 – Building 243

On October 28, 1999 ADEQ approved seventeen Decision Documents (DDs) for no further remedial action planned (NFRAP) were approved by ADEQ, however ADEQ has currently reopened six of them. All six are included in the buyout. The following is a list of the closures of the seventeen:

- All of NAAD 4 - Former CK/CG Demolition Area
- All of NAAD 14B - Building 307
- All of NAAD 18 - D-300 Series Igloos
- All of NAAD E32 - Igloos B-121and H-111
- All of NAAD E36 - Igloos F-306 and F-307
- A portion of NAAD 43 - Former Construction Debris Landfill #2, #3 and #4
- A portion of NAAD 52 - Buildings 33 and 334
- The remainder of NAAD 60 - Buildings 2 and 16
- A portion of NAAD 61 – Building 212

There are six sites that have been determined to be not E,RA eligible. They are as follows:

- NAAD 23A – New Rifle/Pistol Range
- NAAD 25 – Buildings 35 and 36
- NAAD 26 – Building 24
- NAAD 27 – STP Lagoons
- NAAD 39 – Open Hazardous Waste Storage Area
- NAAD E58 – Pipe Spring

PENDING CLOSURES AND SITES NEEDING FURTHER ACTION

The following four sites are currently pending closure:

- All of NAAD 7 – TNT Retention Ponds
- All of NAAD 40 – Former Sanitation Landfill
- The remainder of NAAD 43 – Former Construction Debris Landfill #1
- The remainder of NAAD 53 – Leaking USTs

The following sites can be closed with the submission of a Decision Document stating No Further Action:

- All of NAAD 10 – Pad 3
- All of NAAD 11A – Building 316
All of NAAD 48 – Contaminated soils from NAAD 43

FUTURE CLOSURES AND BUYOUTS

The following sites are to be closed under the OB/OD closure plan, which is currently in development with ADEQ:

- All of NAAD 01 – Old EOD Demo Site
- All of NAAD 02 – Explosive Demolition Area
- All of NAAD 03 – Former White Phosphorus Detonation Area
- All of NAAD 05 – Open Burning Area
- All of NAAD 06 – OB/OD Waste Pile
- All of NAAD 08 – OB Trenches
- All of NAAD 09 – Closed OB Area
- All of NAAD E76 – Potential Mustard Round Burial

These sites are being divided into two categories, those that are E,RA eligible and those that are not. The sites that are not E,RA eligible are addressed in the Installation Action Plan OB/OD, Camp Navajo. These sites include:

- All of NAAD 02 – Explosive Demolition Area
- All of NAAD 05 – Open Burning Area
- All of NAAD 06 – OB/OD Waste Pile
- All of NAAD 08 – OB Trenches
- All of NAAD 09 – Closed OB Area

- All of NAAD E76 – Potential Mustard Round Burial

Also included with these is NAAD 10 – Pad 3, which is currently awaiting a Decision Document of No Further Action to close the site.

The remainder of the sites are to be closed according to the Camp Navajo Buyout Workplan being prepared by Brown and Caldwell. These sites have been prioritized into three groups: Group I High Priority, Group II Medium Priority, Group III Low Priority, and Not Further Action Sites. The sites that have been reopened by ADEQ have been marked with an asterisk.

Group I – High Priority Sites

- All of NAAD 11B – Buildings 318 and 319
- All of NAAD 13 – Deactivation Furnace
- All of NAADs 14A and 14D – Building 322
- *All of NAAD 14C – Building 321
- All of NAADs 14F and 14G – Buildings 325 and 327
- All of NAAD 15B – Building 310
- *All of NAAD 16 – Old Earth Reservoir
- All of NAAD 42 – Construction Debris Landfill
- All of NAAD E46 – Former Construction Debris Waste Pile

Group II – Medium Priority Sites

- All of NAAD 19 – Former Chemical Laboratory
- All of NAAD 20 – Pyrotechnic Range
- All of NAAD 24A – Building 23
- The remainder of NAAD 24B – Building 218
- All of NAAD 29 – Former Asphalt Plant
- All of NAAD 30 – Building 30
- All of NAAD 38 – Former Open Air Storage Area
- *All of NAAD 45 – Quarry Tank
- All of NAAD 59 – Admin Area Burn Pile
- The remainder of NAAD 61 – Building 210

Group III – Low Priority Sites

- *All of NAADs 23B and 41 – Old Firing Range/Cinder Pit #3
- All of NAAD 28 – Indian Village Wastewater Treatment System
- All of NAAD 31 – Buildings 231 and 233
- All of NAAD 49 – Igloo Area C Drum Site
- A portion of NAAD 52 (52A) – Building 25
- *All of NAAD E50 – Admin Area Incinerator

No Further Action Sites

- All of NAAD 15A – Building 301
- All of NAAD 17 – D-200 Series Igloos
- *All of NAAD 21 – Building 331
- All of NAAD 34 – Building 335
- All of NAAD 47 – Warehouse Area Waste Pile
- A portion of NAAD 52 (52B) – Power Pole Across from Building 334
- All of NAAD 40 – Sanitary Landfill
- All of NAAD 43 – Landfill #5

Camp Navajo

ER,A Eligible AEDB-R Sites

NAAD-03
FORMER WP DETONATION AREA (CHEM. CANYON)

SITE DESCRIPTION

This former demolition area was used for destruction of ammunition and bombs from 1945 to the mid 1970's. One or two 250-lb bombs filled with mustard agent was detonated and burned during the middle 1950's. Other historical operations in the WP demolition area include the burning of white phosphorus (WP), plasticized white phosphorus (PWP), and red phosphorus ammunition; venting and burning of mustard agent (H) bombs and demolition of napalm bombs

A standard practice in the clearing of waste dunnage, pallets, metal banding, and other material from the OB/OD area was to use a bulldozer to accumulate and push these materials over the side of Chemical Canyon. This practice has resulted in a large metal debris pile. Along with the waste materials, UXO has been identified in the area. This debris pile has been designated a landfill by ADEQ. The Chemical Canyon landfill is potentially subject to current landfill requirements, and the removal or stabilization of the landfill will be required to obtain closure from ADEQ.

STATUS

RRSE RATING: Medium

CONTAMINANTS:

Explosives, UXO, Phosphorus, Metals

MEDIA OF CONCERN:

Surface Water, Soil, Groundwater

COMPLETED IRP PHASE:

PA/SI, RI

CURRENT IRP PHASE:

None

FUTURE IRP PHASE:

RAC

The existence of large quantities of UXO in the Chemical Canyon area indicates a strong potential for UXO eroding off the installation boundary. A majority of this UXO is white phosphorous ordnance, adding the threat of spontaneous explosions, putting both military and civilian recreational users of the canyon at high risk.

PROPOSED PLAN

Additional sampling will be conducted to evaluate the approximate extent of contaminant migration and to evaluate the potential risk to public health. In the absence of a confirmed risk, any remedial action at this site will be funded from other sources.

NAAD-11B
BUILDING 318 TNT WASHOUT/RECOVERY

SITE DESCRIPTION

STATUS

RRSE RATING: High
CONTAMINANTS:
Explosives, Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA, RI, 2 IRAS
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
LTM

Building 318 housed the former TNT washout and recovery operations. The former open discharge system was changed to a closed system in 1953, an action which eliminated wastewater discharges and the need for the lagoons. When wastewater from the closed system could no longer be recycled, the water from the holding tanks was transported to the Demolition Area for disposal in the TNT retention ponds (NAAD 7) and the open burn trenches (NAAD 6). Soil and groundwater sample collection has identified contaminants at the site to be 2,4,6-trinitrotoluene, 2,4-trinitrotoluene, arsenic, beryllium, RDX, 2,4,6-trinitrotoluene, 2,4-dinitrotoluene, and Lead.

Soil and groundwater at and around Building 319 contained explosives above regulatory and health-based limits. In 1996 about 90 tons of contaminated soil was excavated and disposed of however, confirmation samples showed contamination to be more extensive than originally anticipated. Decontamination and demolition of Building 319 was completed in December 1998 under an OMA-funded contract. In 1999, approximately 1,000 cubic yards of explosives-contaminated soil was excavated concurrently with soil from the TNT retention ponds (NAAD-07), as well as contaminated runoff from the sites. This material was composted successfully. Sixty-six follow up soil samples were taken, with results confirming all to be below nonresidential regulatory criteria, and all but three below residential criteria.

TDEM and seismic transects, in August 1998 and February 1999, revealed two parallel northeast-southwest trending faults which straddle the site, along with the possibility of deeper faults oriented northwest-southeast. A hydrologic investigation is proceeding to verify vertical and lateral extent of groundwater contamination and to characterize the nature of shallow aquifers underlying and adjacent to the site. Ten new monitor wells and thirteen soil borings have been completed. Quarterly groundwater monitoring has confirmed continued explosives contamination, but shows a decrease in concentration and lateral extent since removal of soil in 1999.

Groundwater contamination has been identified in the perched aquifer, and the groundwater remediation that has occurred has not removed all of the contaminants of concern. As part of the validation process to close NAAD-11B, ADEQ has requested the installation of a deep aquifer monitoring well. The regional aquifer is approximately 1500 feet below ground surface. Preliminary information indicates the groundwater contamination is contained in the first 100 feet of alluvium. Data to be collected from a nearby newly installed production well will confirm.

PROPOSED PLAN

Shallow groundwater will be monitored for a period of years to insure that the soil remediation was effective and that residual groundwater contaminant concentrations are reduced or stabilized. Surface water, 2 drinking water wells, and 38 monitoring wells in the Magazine and Warehouse areas will be monitored under a base-wide program funded at this site.

NAAD-14D
BLDG 322 PAINT OPERATIONS

SITE DESCRIPTION

Building 322 was a 4,840 square foot facility used for degreasing, cleaning, and spray painting ammunition, located west of Building 375 in the Ammunition Workshop Area. It contained two paint boots and four acid stripping tanks. Based on data from geophysical surveys, drains from the paint booths connect through a series of pipes for possible discharge to a nearby drainage channel, adjacent to the railroad tracks, that drains southward underneath Lower Reservoir Road. Metals, PCBs and VOCs above levels of concern have been found in soil near and underneath the building.

There is a reasonable probability that contamination underneath the building will potentially impact groundwater.

STATUS

RRSE RATING: High

CONTAMINANTS:

Metals, PCBs, VOCs

MEDIA OF CONCERN:

Soil, Groundwater

COMPLETED IRP PHASE:

PA, RI, IRA

CURRENT IRP PHASE:

None

FUTURE IRP PHASE:

LTM (FUNDED

PROPOSED PLAN

Continue the investigation to delineate nature and extent of contamination. Conduct source area removal to include building demolition incidental to overall removal action. Long Term Monitoring will be conducted at this site under a base-wide monitoring program funded in NAAD- 11B.

NAAD-14G
BLDG 327 RUST REMOVAL BUILDING

SITE DESCRIPTION

Operations at these facilities consisted of disassembly, renovation, and repackaging of various types of ammunition and propellants. Runoff from these facilities could have potentially entered the Old Earth Reservoir and the TNT and laundry wastewater lagoons.

Building 325, a former ammunition repair and disposal workshop, is located at the western end of the Ammunition Workshop Complex. Several smaller shacks on the south side of the complex are included with this site. Past operations of the workshop consisted of drawing off lead and other metal components from a demilitarization blast furnace, repacking shells, disassembling boosters, spray painting, and disposing of small-arms ammunition. Metals contamination was found in the soil, and was subsequently removed and shipped to a disposal facility.

Building 327, a former ammunition repair and disposal workshop, is also located at the western end of the Ammunition Workshop Complex. Past operations of this workshop consisted of repacking shells, disassembling of boosters, spray painting, and disposing of small-arms ammunition. Metals contamination was found in the soil around both buildings. Contaminants identified at the site include arsenic, beryllium, and sym-trinitrobenzene.

Approximately 2,500 cy of lead-contaminated soil was removed and ~ 45 verification samples were collected, indicating no shallow lead-contaminated soil remained. Additionally, 180 sample locations for analysis of lead using EDXRF were taken. These samples also indicated no lead-contamined soil remained.

STATUS

RRSE RATING: Medium

CONTAMINANTS:
Metals

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
LTM (FUNDED)

PROPOSED PLAN

Long Term Monitoring will be conducted at this site under a base-wide monitoring program funded in NAAD- 11B.

NAAD-40
FORMER SANITARY LF (IN STD MAGAZINE AREA)

SITE DESCRIPTION

The former sanitary landfill is located on the eastern part of the standard magazine area. The site reportedly received trash and garbage from NADA activities from the 1940s to 1966. Since that time, solid waste has been hauled off-site to the city of Flagstaff municipal landfill. The former sanitary landfill occupies approximately 4 acres on the side slope of a valley with a dry drainage at the bottom. Two monitoring wells were installed. Nitrate, sulfate, and zinc were detected in groundwater. Nitrate concentration exceeded the National Primary Drinking Water standard. The nearest water supply well is located 2 miles to the west-southwest. The sampling efforts are complete. Contaminants identified in the soil at this site include aroclor 1248, arsenic, barium, benzo(a)anthracene, benzo(a)pyrene, benzo(b) fluoranthene, beryllium, cadmium, dibenz(ah,h,)anthacene, Indeno (1,2,3-c,d)pyrene, lead, and TPH. A Relative Risk Evaluation Worksheet has been prepared.

The RI Report (Tetra Tech, August 1998), in addition to the above contaminants in soil, finds metals, TRPH, and nitrate above health-based exposure limits.

STATUS

RRSE RATING: High

CONTAMINANTS:

Metals

MEDIA OF CONCERN:

Soil, Groundwater

COMPLETED IRP PHASE:

PA, RI, RD, RA

CURRENT IRP PHASE:

None

FUTURE IRP PHASE:

LTM

A Phase II RI and EE/CA was awarded in FY98 to fill in data gaps and evaluate closure alternatives. Four test pits have been dug and leachate sampled from them. Sample results indicated cadimum, lead and chromium concentrations above state groundwater standards. Landfill delineation has been completed by trenching and geophysical surveys.

A Draft Engineering Evaluation and Cost Analysis was prepared in February 2001. The EE/CA recommends that a low-permeability soil cover (cap) be installed. The soil cover in conjunction with drainage controls and groundwater monitoring was recommended as the final closure of the FSL. The soil cover consist of a six-inch foundation layer, an eighteen-inch low-permeability layer, topped off with a six-inch vegetative layer. An on-base borrow source was used for the cover material. The above closure approach has been given preliminary, but not formal, approval from the regulators.

PROPOSED PLAN

Conduct 5 years LTM to be followed by review. Cover maintenance will continue.

NAAD-43
FORMER CONSTRUCTION DEBRIS LANDFILL #5

SITE DESCRIPTION

Five former construction debris landfills were identified from interpretation of aerial photographs and subsequent site visits. They are located north of the Warehouse Area buildings and west of the former Indian Village, respectively. Sinkhole area is approximately 800 feet to the west. The installation deep water supply well is 2,000 feet to the west.

Landfill #5 sampling efforts are complete. Contaminants identified in the soil at this site includes anthracene, arsenic, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, beryllium, chrysene, dibenz (a,h)anthracene, indeno(1,2,3-c,d)pyrene, lead, and TPH. A Relative Risk Evaluation Worksheet has been prepared. Contaminants have been identified in surface soils at this site.

Since the Draft Final RI Report (Tetra Tech, February 1998) found PAHs above regulatory health based levels, remedial action to reduce the risk of exposure was recommended. This site is in proximity to a troop bivouac and training area.

STATUS

RRSE RATING: High
CONTAMINANTS:
Metals, PAHs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RI/FS, 2 IRAS
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
LTM

In FY98 and FY99, an interim removal action was awarded. Additional sampling to complete site characterization was completed in fall 1998. Excavation to remove 1 to 2 feet of soil and construction debris (~ 5900 cy) was completed in the summer and late fall of 1999. Results from confirmation soil sampling indicated that PAHs remained above non-residential criteria at two locations. In January 2001, additional soil was excavated and shipped to the landfill. Confirmation samples indicate additional excavation was required in one location. Work was completed in summer 2001.

PROPOSED PLAN

Prepare closure document.

Camp Navajo

Response Complete Sites

NAAD-01
OLD EOD DEMOL SITE

SITE DESCRIPTION

Old EOD Demolition Area, located south of Igloo Area C, occupies a 700 by 2,100 square foot area. The Demolition activities in this area centered on HE filled ammunition in shell sizes up to 500 lbs, however general purpose bombs, some WP filled projectiles and small arms ammunition were also disposed of occasionally. The area was utilized by the 77th EOD, until the middle 1970's, for demolition and training, with some training related to firing 50 caliber machine guns into bordering banks. Contaminants identified during the RI sampling efforts were Arsenic, Beryllium and Lead. The contaminants reported do not exceed the State of Arizona's clean up standards for soil. A Relative Risk Evaluation Worksheet has been prepared.

STATUS

RRSE RATING: Medium

CONTAMINANTS:

Metals

MEDIA OF CONCERN:

Soil

COMPLETED IRP PHASE:

PA/SI, RI

CURRENT IRP PHASE:

RC - 1997

NAAD-09
CLOSED OB AREA

SITE DESCRIPTION

The Closed burning-related sites are located throughout the Demolition Area, where explosive-contaminated wood (ammunition boxes), fiber tubes (NADA-19 only) and explosive-contaminated wastes and containers (NADA-20) were burned.

STATUS

RRSE RATING: Low

CONTAMINANTS:

Explosives, Phophorus, Metals, VOCs, Pentachlorophenol

MEDIA OF CONCERN:

Soil, Groundwater

COMPLETED IRP PHASE:

PA, RI

CURRENT IRP PHASE:

RC - 2003

NAAD-13
DEACTIVATION FURNACE BLDG 334 AMMO WKSHOP

SITE DESCRIPTION

The former deactivation furnace, located in Building. 334 in the Ammunition Workshop Area, was used for the demilitarization of small-arms ammunition, tracer rounds, primers, detonators, delays, and fuses. The process recovered lead, brass, and steel. This process produced a residual ash material that was dumped outside the building in a waste pile. The furnace was torn down in 1989, and the ash pile and contaminated soil have been removed. USAEHA demonstrated in 1990 that this site is not releasing hazardous constituents to the groundwater. Long-term monitoring is not required by ADEQ as indicated in the approved RCRA closure plan.

STATUS

RRSE RATING: Medium
CONTAMINANTS:
Explosives, Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RI
CURRENT IRP PHASE:
RC - 1997

NAAD-14C
BUILDING 321 AMMUNITION

SITE DESCRIPTION

Building 321 was a 4,029 square foot facility constructed in 1950, located between Buildings 322 and 318 in the central portion of the Ammunition Workshop Area. It was used for debanding projectiles, debagging propellant charges, and painting until the late 1960's. Painting operations included spray painting and a stripping tank.

STATUS

RRSE RATING: High
CONTAMINANTS:
Metals, Conbustible Solids, Solvents
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RI
CURRENT IRP PHASE:
RC - 1997

NAAD-15B
BUILDING 310 RENOVATING AMMUNITION

SITE DESCRIPTION

Building 310 was an ammunition workshop for removing pellets from rifle grenades, renovating shells, punching out primers, painting, burning out tracers, and demilitarizing white phosphorous rounds. It is a 10,261 square foot wood building on a concrete pad elevated approximately three feet above the ground. Contaminants identified in the soil include 2,4-Dinitrotoluene, Arsenic, Beryllium, and Lead.

STATUS

RRSE RATING: Low
CONTAMINANTS:
Explosives, Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA, RI
CURRENT IRP PHASE:
RC - 1997

NAAD-16
OLD EARTH RESERVOIR

SITE DESCRIPTION

This site in not in AEDB-R.

The two old earth reservoirs are located south of Building 327, the former East Packing and Crating building. The old earth reservoirs (chemically treated ponds) were built prior to the NADAs inception to hold runoff from the springs. Analytical results from the 1981 ESE study showed TNT contamination, and the reservoirs also have been known to receive acid wastes generated from ordnance renovation activities in the area. These wastes included nitric, sulfuric, and possibly chromic, phosphoric, and hydrochloric acids (EPA 1982). The contaminant identified at the site is TNT at low concentration levels, however, additional RI sampling data indicates that 20 cubic yards are impacted above regulatory level.

STATUS

RRSE RATING: NE
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC

NAAD-19
FORMER CHEM LAB BLDG 460 (IGLOO AREA D)

SITE DESCRIPTION

Building 460 is located in Igloo Area D and was used from the 1940's to the 1960's for sampling, testing, and surveillance of chemical munitions containing CK and CG. In 1970 Building 460 was declared excess and was razed and removed. Decontamination was accomplished by flushing with water and exposing to air, with wastewater discharged to an area adjacent to the west side of the building. Residues in the wastewater were soluble, inorganic salts. Contaminants identified at the site include Arsenic, Beryllium, Barium, Cadmium, Chromium, Lead, Mercury, Silver, 4,4-DDD, 4,4-DDE, bis(2-Ethylhexyl)-phthalate, Nitrate, Nitrite, TPH, and Diesel Fuel #2.

STATUS

RRSE RATING: High

CONTAMINANTS:

Pesticides, Metals

MEDIA OF CONCERN:

Surface Water, Soil, Groundwater

COMPLETED IRP PHASE:

PA, RI, IRA

CURRENT IRP PHASE:

RC - 1997

NAAD-20
PYROTECHNIC RANGE

SITE DESCRIPTION

The pyrotechnic range is an area of approximately 100 acres in the southeastern part of Camp Navajo, between the Demolition Area and the east buffer area, just northwest of Rogers Lake. The range was used for the surveillance testing of controlled quantities of conventional munitions. The surveillance testing included small arms ammunition, rocket motors, and grenades filled with HE, HC, colored smoke, WP, PWP, CN, CS and thermite. Runoff from the east end of the range may drain into Rogers Lake. Contaminants identified include Arsenic, Beryllium, and 1,2,3 Trichlorobenzene. The concentrations of contaminates of concern were not above the State of Arizona's clean-up standards in soil.

STATUS

RRSE RATING: Medium

CONTAMINANTS:

Metals

MEDIA OF CONCERN:

Surface Water, Soil

COMPLETED IRP PHASE:

PA, RI

CURRENT IRP PHASE:

RC - 1997

NAAD-23B OLD FIRING RANGE
NAAD-41 CINDER PIT #3 (IN IGLOO AREA A)

SITE DESCRIPTION

The site is a former 1.2-acre landfill on the northeast side of the road entering Cinder Pit #3 landfill. The landfill materials have been covered with cinders. Minor quantities of exposed waste include metal banding, metal parts, cable, wood, targets, empty drum, and empty gallon cans. The contaminants identified in the soil at the site are Arsenic and Beryllium. These metal concentrations appear to be naturally occurring background concentrations. The geophysics identified a large metal anomaly. Rumors of an old V2, German missile buried here are thought to be unfounded. A relative risk evaluation worksheet has been prepared for that site.

STATUS

RRSE RATING: Low
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RI
CURRENT IRP PHASE:
RC - 1997

NAAD-24A
BUILDINGS #23 AND #30 MAINTENANCE SHOPS

SITE DESCRIPTION

The vehicle and locomotive maintenance shop is 16,727 square feet. Repair and maintenance is performed on trucks and vehicles up to 7 tons, with current operations including general vehicle maintenance and services. Spent stripping and degreasing solvents, waste oils and other vehicle fluids, and used battery acids are collected in pans at each work station and stored in separate 55-gallon drums inside the building. A 1,000-gallon waste oil tank located outside to the south of the building has been replaced by a 1,000 gallon above ground storage. An outdoor wash bay for vehicle steam cleaning is located adjacent to Building. 23. Water from the oil-water separator will be plumbed into the wastewater (sanitary sewer) collection system as part of the collection system replacement currently under contract. Suspected contaminants include petroleum hydrocarbons, volatile and semivolatile organics, metals, and PCBs. Metal contamination was found in the soils at the site. Contaminants identified in the soil at this site include Arsenic, Beryllium, and Lead.

STATUS

RRSE RATING: High
CONTAMINANTS:
TPH, Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RI, IRA
CURRENT IRP PHASE:
RC - 1997

NAAD-24B
BUILDING 216 AND 218 SPRAY PAINT/WELDING

SITE DESCRIPTION

Building 218 is an 18,207 square foot, concrete floored building with 12 bays on each side located in the warehouse area. The building was last used for automobile maintenance. It is equipped for rail car maintenance and was presumably used for this purpose in the past. Until 1994 there were floor drains over sumps in the southwest and southeast corners of the raised area. These sumps were connected to Camp Navajo's sanitary sewer system. In March 1992, Camp Navajo conducted a base-wide cleanup effort to collect and dispose of any accumulated wastes. These wastes were placed in a total of 170 drums, and temporarily stored in Building 218 and gradually shipped off site for disposal. Contaminants identified in the soil at this site include Arsenic, Beryllium, and Diesel Fuel #2. A Relative Risk Evaluation Worksheet has been prepared.

STATUS

RRSE RATING: High

CONTAMINANTS:

TPH, Metals

MEDIA OF CONCERN:

Soil

COMPLETED IRP PHASE:

PA, RI, IRA

CURRENT IRP PHASE:

RC - 2003

NAAD-28
WWT FORMER LAGOONS

SITE DESCRIPTION

The Indian Village wastewater treatment system is located northeast of Igloo area G, along the patrol road, south of Gate 7A. An inactive concrete Imhoff tank provided filtration of domestic sewage wastewater generated by the former Navajo and Hopi workers' village. Three former sewage lagoons, all unlined, were used from 1940's to 1971 to hold effluent from the Imhoff tank as well as untreated sewage from the Indian Village. The area of each lagoon ranges from about 0.7 to 1.0 acres. The three lagoons received untreated wastes which would have infiltrated into the soluble soil and evaporated in the lagoons. All three lagoons typically contained water during the wet season; during the dry season, the two northern lagoons usually became dry and overgrown with vegetation. Contaminants identified in the soil at this site include Arsenic, Beryllium, Lead, Mercury, Ammonia, Nitrate, and Nitrite. A Relative Risk Evaluation Worksheet has been prepared.

STATUS

RRSE RATING: High

CONTAMINANTS:

Metals

MEDIA OF CONCERN:

Soil

COMPLETED IRP PHASE:

PA, RI

CURRENT IRP PHASE:

RC - 1997

NAAD-29
FORMER ASPHALT PLANT

SITE DESCRIPTION

Building S-207, commonly known as the former asphalt plant, was 697 square feet and was located in the southeast portion of the Warehouse Area. The plant was built in 1942 at the same time Camp Navajo roads were being surfaced. The plant had a coal-fired heater to make hot oil for asphalt production. The asphalt emulsion was supplied from three elevated tanks and was reported to have been mixed on the ground. Contaminants identified in the soil at this site include Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenz(a)anthracene, Indeno(1,2,3-c,d)ptrene, 2-Methylnaphthalene, Benzo(g,h,i)perylene, Phenanthrene, and Diesel Fuel #2. Contaminated soil was removed and shipped to a disposal facility.

STATUS

RRSE RATING: Medium
CONTAMINANTS:
TPH, PAHs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RI, IRA
CURRENT IRP PHASE:
RC - 1997

NAAD-30
OLD HOSPITAL (NOW AANG ADMIN AREA) BLDG 101

SITE DESCRIPTION

The vehicle and locomotive maintenance shop is 7,219 square feet and contains three locomotive service bays. Locomotive maintenance and servicing were and are still being performed in Building. 30. Waste products from stripping and degreasing oils and other fluids were and still are being collected in separate 55-gal drums for disposal. Contaminants identified in the soil at this site include Arsenic, Beryllium, Lead, and TPH. A Relative Risk Evaluation Worksheet has been prepared. An IRA was completed in October 96. Contaminated soil was removed and shipped to a disposal facility.

STATUS

RRSE RATING: NE
CONTAMINANTS:
TPH, Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RI
CURRENT IRP PHASE:
RC - 1997

NAAD-31
FORMER STG OF MERCURY, BLDG 231, 233

SITE DESCRIPTION

GSA Mercury stocks were housed in Building 231 or 233, or both, from 1953 until they were moved to Igloo Area H in 1960. The mercury warehouse building collapsed in a snowstorm in 1967, and the superstructure was subsequently removed. Mercury leaks were reported to have occurred in the GSA warehouse where mercury was stored. In 1979, there were traces of mercury visible in the cracked foundation of Building 231. The concrete pad at building 231 and 233 (approximately 141,000 square feet each) and the surrounding soil were potentially contaminated. No contamination was detected in the soils at these sites. No mercury was identified in the soil at these sites. A Relative Risk Evaluation Worksheet has been prepared for each building.

STATUS

RRSE RATING: NE

CONTAMINANTS:

Mercury

MEDIA OF CONCERN:

Soil

COMPLETED IRP PHASE:

PA, RI

CURRENT IRP PHASE:

RC - 1997

NAAD-38
FORMER OPEN AIR HW STORAGE AREA

SITE DESCRIPTION

The former open-air storage area is next to and north of the current pesticide storage building (Building 244) in the Warehouse Area. In 1990, this unpaved site (approximately 3.6 acres) was reported littered with drums and other containers. After 1990, the site was no longer used as a transfer point for equipment and materials from current operations. Three drums containing ash from the deactivation furnace were present during a December 1990 site visit. The drums have been removed but spilled ash was observed during a site inspection in October 1994. An IRA was completed in October 96. Contaminated soil was removed and shipped to a disposal facility.

STATUS

RRSE RATING: Low

CONTAMINANTS:

TPH, Metals, Pesticides, Herbicides, Pentachlorophenol, Bromacil

MEDIA OF CONCERN:

Soil, Air

COMPLETED IRP PHASE:

PA, RI

CURRENT IRP PHASE:

RC - 2003

NAAD-42
CONSTRUCTION DEBRIS LANDFILL (MAGAZ. AREA)

SITE DESCRIPTION

The construction debris landfill occupies a 2-acre area in a former limestone excavation pit in the southwestern corner of the standard magazine area. The landfill was in use from the late 1970's to an unknown date, appearing to still be in operation at the time of a site visit in December 1990. Visible debris at the landfill consists mainly of concrete, wood, bricks, reinforcing steel, empty cans and drums, roofing shingles, steel banding, tires, aluminum materials, asphalt, and concrete practice bombs. Contaminants identified in the soil at this site include Arsenic, Beryllium, and Diesel Fuel #2. A Relative Risk Evaluation Worksheet has been prepared.

STATUS

RRSE RATING: Low

CONTAMINANTS:

TPH

MEDIA OF CONCERN:

Soil

COMPLETED IRP PHASE:

PA, RI

CURRENT IRP PHASE:

RC - 1998

NAAD-45
QUARRY TANK (IN IGLOO AREA C)

SITE DESCRIPTION

The quarry tank area is located along the northern part of the boundary between Igloo areas B and C. The area consists of three adjacent limestone quarry pits dating from NADA construction, aligned and numbered in sequence from north to south. Pit 1 contains permanent water, many empty rusted cans marked "Smokeless Powder for Small Arms", wood, various sizes of empty cans, truck parts, metal banding, and concrete containing reinforcing bars. Pit 2 contains banding, wire, metal stoves, paint cans, concrete ammunition cans, and metal drums. Pit 3 contains steel cable and broken clay pipe. No contaminants were detected in the surface water. Contaminants identified in the soil at this site include Arsenic, Beryllium, and bis(2-Ethylhexyl)-phthalate. A Relative Risk Evaluation Worksheet has been prepared.

STATUS

RRSE RATING: Low

CONTAMINANTS:

Metals

MEDIA OF CONCERN:

Soil

COMPLETED IRP PHASE:

PA, RI

CURRENT IRP PHASE:

RC - 1997

NAAD-46
CONSTRUCTION DEBRIS WASTE PILE

SITE DESCRIPTION

This site in not in AEDB-R.

The site is located within the southern portion of the Standard Magazine Area in the north central portion of the Base. It consists of two one-acre sites separated by 300 feet that were used historically to dump construction debris. The western area is a 50-foot wide depression along the side of the drainage. The depression is partially filled with bricks, transite siding, and concrete. The eastern site lies outside the drainage and consists of limestone blocks and concrete.

STATUS

RRSE RATING: NE

CONTAMINANTS:

TPH

MEDIA OF CONCERN:

Soil

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

RC

NAAD-49
IGLOO AREA C DRUM SITE

SITE DESCRIPTION

This surface waste disposal site is located in the eastern portion of Igloo area C, approximately 600 feet east of the railroad tracks. Little is known about the sources of the waste materials at the site. The site has in the past received cans marked “Thinner Dope and Lacquer Nitrate”, paint cans, drums marked “kerosene and poison”, banding, metal debris, possible asbestos, and possibly PCBs. A 1959 aerial photo shows what may be a scarred area in a clearing downslope from the drum site. An IRA was completed in October 96. Contaminated soil was removed and shipped to a disposal facility.

STATUS

RRSE RATING: Low

CONTAMINANTS:

VOCs, PCBs, Pesticides, Herbicides, Explosives, Metals

MEDIA OF CONCERN:

Soil

COMPLETED IRP PHASE:

PA, RI

CURRENT IRP PHASE:

RC - 1997

NAAD-50
ADMIN AREA INCINERATOR

SITE DESCRIPTION

This site is not in AEDB-R.

The site is located within the Administration Area in the northern portion of the Base. The site consists of a 57 square foot incinerator with an approximately 15-foot high exhaust stack. Based on the design of the incinerator and the nature of the operations at the Base, the incinerator is likely to have been used to burn flammable materials, such as paper products and documents. Since the size of the incinerator is relatively small, bulk household wastes are not likely to have been burned.

STATUS

RRSE RATING: NE

CONTAMINANTS:

Dioxins

MEDIA OF CONCERN:

Soil, Groundwater

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

RC

NAAD-52A
BUILDING 25

SITE DESCRIPTION

This site is not in AEDB-R.

PCB contamination at the NADA site has occurred as the result of oil spills from transformers containing PCB's. There is also a possibility that oils containing PCB's were formerly used as a component of hydraulic fluids and may be present from hydraulic fluid leaks or spills in the maintenance areas. One PCB transformer is currently in operation at NADA, located near AZNG facilities. Other areas of potential PCB releases also exist at NADA. Two or three PCB-contaminated transformers that were stored across the road from the deactivation furnace, Building. 334, were reported to have settled into the ground and tipped over, releasing PCB-contaminated oil. There is a possibility that transformers stored in Building. S-18 were PCB contaminated. Building. 253 also reportedly stored PCB contaminated transformers. No further action is recommended for this site.

STATUS

RRSE RATING: NE

CONTAMINANTS:

PCBs

MEDIA OF CONCERN:

Soil

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

RC

NAAD-59
ADMIN AREA BURN PILE

SITE DESCRIPTION

The Administration Area Burn Pile, measuring 60 by 190 square feet, is located in the western part of the administrative area. The pile, with heaviest use occurring at the western 75 ft, was moved to its current location from a location west of Gate 6 in the mid-1960s. The pile was used mainly to burn scrap lumber. Scrap banding was piled next to the burn for recycling. The contaminants identified include Arsenic, and Beryllium. The concentration identified in the soil does not exceed the State Arizona's clean-up standards for soil at this site. A Relative Risk Evaluation Worksheet has been prepared.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RI
CURRENT IRP PHASE:
RC - 1997

NAAD-61
BUILDINGS 210 AND 212 BATTERY OPERATIONS

SITE DESCRIPTION

Building 210 is the Forklift battery-charging facility located in the warehouse area. Building 210 sample collection efforts are complete and a Draft Site Closure Report has been submitted. No further action is recommended for this site.

STATUS

RRSE RATING: Low
CONTAMINANTS:
Acid, Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA, RI
CURRENT IRP PHASE:
RC - 1997

OTHER RESPONSE COMPLETE SITES

AEDB-R #	Title
NAAD-02	
NAAD-04	CK/CG Demo & Drum Burial Site (1997)
NAAD-07	TNT Retention Ponds (2001)
NAAD-10	PAD 3 (1997)
NAAD-11A	Bldg 316 Laundry Facility & Wastewater Lagoon (1990)
NAAD-14B	Bldg 307 Renovating Shells (1997)
NAAD-15A	Bldg 301 Paint Operation (Current Ammo Workshop) (1997)
NAAD-17	D200 Series Igloos (Part of AREE 16) (1997)
NAAD-18	D300 Ara Igloos (1997)
NAAD-21	Bldg 331 Surveillance Workshop Area (1997)
NAAD-23A	New Rifle/Pistol Range (1997)
NAAD-25	Bldgs 35 & 36 Paint Operations (1994)
NAAD-26	Bldg 24 Heavy Equipment Storage (1994)
NAAD-27	STP Lagoons and Corresponding Creek Bed (1994)
NAAD-33	Former Pesticide Storage Igloo (H118) (1990)
NAAD-34	Bldg 335 Pesticide/Herbicide/Rodenticide (1997)
NAAD-39	Open HW Storage Area (Adj to Bldg 41) (1994)
NAAD-47	Construction Area Waste Pile (1997)
NAAD-48	Contaminated Soils From Former UST Sites (1995)
NAAD-49	Igloo Area C Drum Site (197)
NAAD-52	PCB Leaks/Spills Installation Wide (1996)
NAAD-53	Abandoned, Leaking Tank (2003)
NAAD-60	Bldgs 2, 16, 34 (1997)
NAAD-E32	Mercury Storage-Igloo H-111, B-121 (1997)
NAAD-E36	Former Tritium Storage, Bldg F306/F307 (1997)
NAAD-E37	GSA Warehouse - Bldg Debris (1997)
NAAD-E46	Construction Debris Waste Pile (1997)
NAAD-E50	Admin Area Incinerator (1997)
NAAD-E58	Pipe Spring - Radiation (1994)
NAAD-E76	Potential Mustard Round Burial Site (2003)

Schedule

PAST MILESTONES

Various environmental investigations, studies, and reports have been conducted since 1970 to address possible contamination at Camp Navajo. For a schedule of current & future IRP work, see below and attached bar chart.
(Note: The schedules are subject to change due to available funding and regulatory delays. The schedule is for all E,RA funding-eligible sites listed in the IAP. Due to funding availability, sites will be grouped for investigation based on the severity of contamination and/or potential for endangerment of human health or other biological populations. Following the investigation, sites will be broken into operable units as soon as feasible. A new schedule will then be developed for operable unit.)

PAST PHASE COMPLETION MILESTONES:

IRP Phase		Completion Date
RD/RA	Group G	Dec 89
PA/SI	Installation	Mar 90
CA	UST Sites Building. 27, 203, Storm Retention Pond, Group F	Jan 94
CA	UST Site Building 205, Group F	Apr 94
CA	Soil Stockpiles, Group F	Jan 95
CA	Group G	Aug 95
RI	Group F	Sep 95
REM	Group E	Dec 95
RD	Group F	Sep 96
IRA	Group B-1, B-4	Oct 96
IRA	Former Asphalt Plant	Oct 96
IRA	Former Open Air Storage	Oct 96
IRA	Indian Village former WWT Lagoon	Oct 96
IRA	Former Chemical Laboratory	Oct 96
IRA	Igloo Area Drum site	Oct 96
RI	Group C1, 2, 3	May 98
RI	Group B1, 2, 3, 4	May 98
IRA	Building 335 Pesticide/Herbicide/Rodenticide	Jun 98
IRA	CK/CG Drum Burial Site	Jun 98
IRA	TNT Retention Ponds	Jan 99
EE/CA	Former Sanitary Landfill - NAAD 40	Nov 01
IRA	Former Construction Debris Landfill - NAAD 43	Jul 00
IRA	Building 318 TNT Washout/Recovery - NAAD 11B	Jun 00
RA	Former Sanitary Landfill	Nov 01

PROJECTED MILESTONES

Projected Completion Date of all RA: **FY 2007**
Projected Completion Date of IRP: **FY2007**

NO FURTHER ACTION SITES

The remediation of the ash pile and contaminated soil at NAAD 13, Deactivation Furnace Building 334 Ammo Workshop, was executed by the Los Angeles District Corps of Engineers. The ash pile and contaminated soil had been removed. Closure report has not been approved by ADEQ.

No Further Action is proposed for:

Pad 3	AREE-10	NAAD-10		Group C-1
Old EOD Demolition Area	AREE-1	NAAD-1	NADA-4	Group C-2
Former Deactivation Furnace, Ash Disposal Pile & Ash Storage Building	AREE-13	NAAD-13	NADA-13,14	Group G
Building 322 Acid Vats	AREE-14	NAAD-14A		Group B-1
Building 307 Renovating Shells	AREE-14	NAAD-14B		Group B-1
Building 301 Paint Operations	AREE-15	NAAD-15A		Group B-1
Building 310 Renovating Ammunition	AREE-15	NAAD-15B		Group B-1
D-200 series Igloos	AREE-17	NAAD-17		Group C-1
D300 Area Igloos & “Y” Sites	AREE-18	NAAD-18		Group C-1
Former Chemical Laboratory	AREE-19	NAAD-19	NADA-2	Group C-1
Pyrotechnic Range	AREE-20	NAAD-20		Group C-2
Building 331 Surveillance Workshop Area	AREE-21	NAAD-21		Group B-2
Old Firing Ranges	AREE-23	NAAD-23B		Group C-2
Building 23 & 30 Maintenance Shops	AREE-24	NAAD-24A	NADA-30	Group B-2
Former Asphalt Plant	AREE-29	NAAD-29		Group B-3
Old Hospital Building 101	AREE-30	NAAD-30		Group B-2
Former Mercury Storage Building 231 & 233	AREE-31	NAAD-31		Group B-3
Igloos H-111 and B-121 Former Mercury Storage	AREE-32	NAAD-E32		Group C-2
Igloos F-306 and F-307. Former Tritium Storage	AREE-36	NAAD-E36		Group C-2
Cinder Pit #3 (in Igloo Area A)	AREE-41	NAAD-41	NADA-16	Group C-3
Construction Debris Landfill	AREE-42	NAAD-42	NADA-25	Group C-3
Quarry Tank Area	AREE-45	NAAD-45	NADA-15	Group C-3
Construction Debris Waste Pile	AREE-46	NAAD-E46	NADA-24	Group C-3
Igloo Area C Drum Site	AREE-49	NAAD-49		Group C-2
Administration Area Burn Pile	AREE 59	NAAD 59		Group B-2
Building #2, #16, #34	NAAD-60	NADA-60		Group B-2
Building 210 & 212 Battery Operations	NAAD-61	NADA-61		Group B-3
Buffer Area	AREE-22			
New Rifle/Pistol Range	AREE-23	NAAD-23A		
Building 35 & 36 Paint Operations	AREE-25	NAAD-25		
Building 24, Heavy Equipment Storage	AREE-26	NAAD-26		
Wastewater Treatment	AREE-27	NADA-22,23		
Igloo H-118, Former Pesticide Storage	AREE-33	NAAD-33		
Current Pesticide Storage Building 244	AREE-35			
GSA Warehouses	AREE-37	NAAD-E37		
Open Storage Area Adj to Building 41	AREE-39	NAAD-39	NADA-28	
Pipe Spring Igloo Area G	AREE-58	NAAD-E58		

Remediation Activities

Complete REM/IRA/RA

NAAD-13 (Group G), the equipment is decontaminated and ash pile and contaminated soil is removed, (14A, 14B, 14C, 14D, 15A, 15B, 19, 24A, 28, 29, 34, 38, 43, (4, 44), 49, 11B, 07, 40, 43).

Current REM/IRA/RA

None

Projected REM/IRA/RA

RD/RA for NAAD-03

Community Involvement

RESTORATION ADVISORY BOARD (RAB) STATUS

A community relations plan is being prepared for FY 02. A community solicitation for a RAB occurred in FY00. There was insignificant interest to establish a RAB at that time.

December 2003

Camp Navajo

Installation Action Plan

December 2003

Camp Navajo

Installation Action Plan

December 2003

Camp Navajo

Installation Action Plan

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